

Notice of Allowability

Application No.

10/708,572

Applicant(s)

TAI ET AL.

Examiner

Art Unit

Carol S. Tsai

2857



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/11/2004.
2. ☒ The allowed claim(s) is/are 1-18.
3. ☒ The drawings filed on 11 March 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-18 are allowed.
2. The following is an examiner's statement of reasons for allowance:

U. S. Patent No. 6,782,302 to Barto et al. is the reference closest to the claimed invention. Barto et al. disclose a method for processing workpieces using a resource, comprising: generating a plurality of engagements for processing the workpieces by the resource, each engagement being associated with one of the workpieces and having associated processing requirements; designating a first one of the plurality of engagements as a seed engagement; identifying a set of candidate engagements from the plurality of engagements having associated processing requirements compatible with the processing requirements of the seed engagement; and generating a combined engagement including the seed engagement and at least one of the candidate engagements. However, Barto et al. do not teach a method for prevention maintenance management of at least one piece of semiconductor equipment, each piece of equipment processing a plurality of semiconductor products according to at least one corresponding process parameter, the method comprising: recording each process parameter of each piece of equipment; recoding processing conditions of each piece of equipment as at least one corresponding equipment parameter when each piece of equipment is processing; evaluating and recording time and cost of prevention maintenance after each piece of equipment has run prevention maintenance, evaluating the quality of semiconductor products after each semiconductor product has been processed; and analyzing a relationship between the corresponding process parameter, the equipment parameters, prevention maintenance cost, and

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the semiconductor product quality of each piece of equipment; and including all of the other limitations in the respective independent claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hoste discloses a method and apparatus records downtime and the probable cause of the downtime of a network of programmable logic controllers and other microprocessor based devices for controlling of a manufacturing process.

Cruse discloses a method and apparatus that provides process monitoring within a semiconductor wafer processing system using multiple process parameters.

Jeon et al. disclose a method for controlling semiconductor processing equipment in real time, including measuring a characteristic value of a product of a first process performed by a first piece of equipment.

Yanagisawa discloses a semiconductor wafer manufacturing method capable of removing a deteriorated layer formed on the surface or in the interior of a semiconductor wafer such as silicon wafer.

Tamaki discloses a management system for semiconductor fabrication devices with a

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sensor for always collecting management information from a fabrication device provided in a semiconductor fabrication process line, and a determiner for monitoring the management information collected by the sensor as a time-sequential measured value pattern, and for comparing the measured value pattern with a set value pattern registered beforehand in accordance with the management information.

Sakaguchi discloses a maintenance and management method of equipment for production operations, comprising: obtaining machinery component defect data by inspecting the equipment; performing countermeasures and inspections based on these data; obtaining defect frequency data and inspection standards data, classifying the defects of the equipment by importance; repeating an overall inspection based on the defect frequency data until the defect frequency data of all defect locations have lowered to a standard value or lower; then, producing operating standards data based on inspection standards data; and performing maintenance and management by individually feeding back the operating standards data to each operator, and a maintenance and management support system used for performing the method.

Contact Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol S. W. Tsai whose telephone number is (571) 272-2224.

The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571) 272-2216. The fax number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 886-217-9197 (toll-free).



Carol S. W. Tsai
Primary Examiner
Art Unit 2857

cswt
May 23, 2005